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Abstract

Using a longitudinal, UK representative sample from the Millennium Cohort Study, the present study examined longitudinal variations in parent ratings of child social, emotional and behavioural difficulties and prosocial behaviour (preschool to end of Key Stage 1); the magnitude of parent-teacher agreement regarding behaviour ratings; and concurrent relationships between behaviour and language and literacy at the end of the Key Stage 1. The findings showed significant downward trends in ratings of young children's social and behavioural difficulties and an increase in ratings of prosocial behaviour over the 3-7 years period. Ratings of emotional difficulties remained fairly stable over the same period. Also, medium- to- strong language and literacy effects were found for behavioural difficulties (eg, hyperactivity) and prosocial behaviour. Finally, teacher-parent agreement regarding behaviour ratings was found to be modest but higher for social and behavioural difficulties, hyperactivity in particular than for emotional symptoms and prosocial behaviour. These findings have important implications for preschool and primary school policy and practice regarding children's social behaviour.

Keywords: social behaviour, behaviour difficulties, language and behaviour

Children's social behaviour, language and literacy in early years

Introduction

The educational significance of behavioural, emotional and social difficulties in young children has received considerable attention (Miller-Lewis et al, 2006; Phillips and Lonigan, 2010; Pike et al, 2006). Emergent behaviour difficulties in early years have been found to be predictive of social difficulties and peer rejection in later childhood (Wood, Cowan and Baker, 2002) and academic difficulties (Tomblin, Zhang, Buckwalter and Catts, 2000). The rate of behaviour difficulties among preschool children has been reported at approximately 20% (Lavigne et al., 1996), which drops as children enter formal education. In a community study, Miller-Lewis et al (2006) estimated 12-14% of ~~preschool children~~4 year olds to experience externalizing behaviour difficulties whilst Upshur and colleagues in the USA (2009) found 34% of ~~young~~ children aged 3 to 5 to meet the cut-off criteria for behaviour problems. Although estimates vary, on average, around a quarter of preschool children has been reported to exhibit behaviour difficulties. And among them, for about 10-15%, behaviour problems are likely to persist well into their formal school years (Campbell, 1995).

The association between language difficulties and behaviour problems is well established in the literature. There is evidence that many children with language difficulties show behaviour problems, and conversely many children with behaviour difficulties show previously unidentified language difficulties. Several longitudinal studies have demonstrated a close link between language difficulties and behaviour problems in primary school children (eg, Cohen, 2001; Spira, Bracken and Fische, 2005). Noterdaeme and Amorosa (1999) found even higher percentages, up to 80% of serious behavioural difficulties for children with specific language

impairment, and among them, 50% were rated as having behaviour difficulties (hyperactivity in particular) and about 20% were rated with emotional difficulties.

In exploring the relationship between language and behaviour, the type (eg, language comprehension, speech) and the severity of language difficulties and children's age have been shown to be important determinants. On both sides of the Atlantic, s~~S~~everal authors have found that the prevalence of behaviour difficulties was highest in language impaired groups and least extensive in speech impaired groups (Baker and Cantwell, 1987; Beitchman et al, 2001). Speech impairment was found to be accompanied by behaviour problems in 31% of children of primary school age~~the cases~~. Combined speech and language problems were found in 58% of children with behaviour difficulties, and of the children with receptive language difficulties, 73% showed behaviour problems (Baker and Cantwell, 1987). Despite compelling evidence about the relationship between language and social competence, an inconsistent pattern emerges in young children. In a study by Fujiki et al. (1999), although children with language difficulties were more likely to score lower in social skills compared to their typically developing peers, no consistent pattern of association between language and social behaviour was found. Likewise, in a community sample of children between 18 and 35 months, language and behaviour were not correlated (Rescorla and Achenbach, 2002).

Young children's behaviour has been found to change during the early years. Approximately half of preschool children with significant externalising difficulties have been found to no longer manifest these behaviours after their transition to school (Campbell et al., 2000; Keenan and Wakschlag, 2000; Lavigne et al, 1996). A peak of socially inappropriate behaviour, aggression in particular, has been observed in three year olds (Egger and Angold, 2006), followed by a decline in oppositional difficulties between the ages of 3 and 5 years (Lavigne et al, 1996). In contrast, e~~E~~motional difficulties in three- year- olds were reported to be highly stable across 12 months, with coefficients of .75 and .74 based on maternal and paternal reports respectively (Edwards et al, 2009), and stable only between ages 4 and 5 (Rose et al, 1989), whereas in a study by Redmond and Rice, a downward trend in emotional difficulties was found for the period of 6-8 years (2002).

The relationship between behaviour and academic achievement, reading in particular, is also well established. School-related problem behaviours such as inattentiveness or hyperactivity have been found to influence school readiness (eg, Tomblin et al, 2000; ~~Hinshaw, 1992~~) and literacy (Morgan et al, 2008; Miles and Stipek, 2006). Miles and Stipek investigated longitudinal associations between social behaviour and literacy in young children at school entry. Consistent associations between social skills and literacy achievement were found during the primary school years but the patterns of the associations were different for behaviour difficulties and prosocial behaviour. While the strength of the association between behaviour difficulties and literacy increased, the association between prosocial behavior and literacy decreased, with poor literacy skills being good predictors of behaviour difficulties (2006). The link between literacy and behaviour is particularly important because literacy is critical to school success in all subject areas as well as to life outside school. Children whose reading and writing skills have not developed well are likely to experience frustration and anxiety and difficulties in self regulating emotions which, in turn, are likely to sustain reading difficulties because children begin to avoid literacy tasks. ~~Also, behaviour difficulties have been found to more strongly associate with reading achievement than with mathematics in primary school children (Hinshaw, 1992).~~

To understand the bidirectional influences of language, literacy and behaviour over time, four theoretical explanations have been~~are~~ offered. The first is based on the notion that language or literacy difficulties (due to factors such as phonological difficulties or poverty) might trigger frustration, avoidance and withdrawal from language and literacy tasks (eg, Morgan et al, 2008; ~~Miles and Stipek, 2006~~).This process may take time in that ~~considering the emerging normative comparisons,~~ as children grow older they become increasingly more aware of their abilities and performances in comparison to their peers, possibly, experiencing negative emotions that may set the stage for increased difficulties with social behaviour. The second explanation refers to behavioural difficulties (eg, hyperactivity, inattention) contributing to language, reading and writing difficulties. Off-task and disruptive behaviours may pose obstacles to children attending and processing information in class (eg, Downer and Pianta, 2006). Thirdly, it may be that language/ literacy and behaviour difficulties co-exist and reciprocally influence each other in a cyclical manner manifested as cycles of disruptive behaviour triggering learning disengagement and school failure which further accentuate manifestations of acting out, frustration or task avoidance (Morgan et al, 2008). Fourthly, the presence of a third factor may explain the association between language / literacy and behaviour. Factors such as poverty, ethnicity or social class have been found to predict differences in language, literacy and behaviour in young children (eg, Pike et al, 2006).

Most studies on children's reading, language and behaviour focus on externalising difficulties and in 'at risk' groups with fewer on community-based samples (Pike at el, 2006). Despite the increasing emphasis on young children's social and emotional wellbeing, little is known about the longitudinal and contextual variation of child behaviour and its links with language and literacy during the early primary school years. Some studies on behaviour difficulties in young children have shown limitations with regard to the sample representativeness as well as in the use of behaviour classification checklists at a single point in time, which do not capture the developmental changes during preschool and early primary school years (Angold and Egger, 2004). Indeed, few studies have used longitudinal designs with repeated measures on child behaviour between preschool and the end of Key Stage 1 to examine temporal aspects of behaviour (Miller –Lewis et al, 2006; Pike et al, 2006). And fewer studies have included ratings of prosocial behaviour as a counterpoint to negative behaviours (Phillips and Lonigan, 2010). The last point is important because children's wellbeing is not simply the absence of behavioural and social difficulties but also the capacity to 'flourish' through engaging prosocially with others (Keyes, 2007).

A small but growing number of studies have included both teacher and parent ratings to examine context specificity in children's behaviour. The use of multiple sources of information (eg, parents, teachers) influences behaviour ratings, especially when informants are not in agreement (eg, Achenbach, McConaughy and Howell, 1987; Lindsay, Dockrell and Strand, 2007; Lundervold, Heimann and Manger, 2008). Parents and teachers often differ in their perceptions of children's behaviour. A review of cross-informant correlations of child behaviour by Achenbach and colleagues reported a mean correlation of .27 between parent and teacher ratings. Weak correlations have also been reported for emotional difficulties (~~Hinshaw, 1992~~Lindsay et al, 2007). The low level of parent-teacher agreement may be explained by considering the

context of children's behaviour which differs depending on the academic, emotional and social demands in the home and at school.

Using a large community sample, the purpose of this study was two-fold: First, to examine longitudinal variations in parent ratings of child social, emotional and behavioural difficulties and prosocial behaviour during preschool (age 3), at school entry (age 5) and at the end of Key Stage 1 (age 7). Secondly, to examine the magnitude of parent-teacher agreement regarding behaviour ratings and the concurrent relationships between parent and teacher behaviour ratings (both positive and negative) and language and literacy at the end of the Key Stage 1. This study took a dimensional approach by examining different aspects of behaviour (eg, emotional difficulties, conduct problems, prosocial) across three different points in time and in two different settings (home, school) and its links with language and literacy. Although a large body of research has examined the relationship between behaviour and language / literacy, most studies have focused on older children and few studies (with the exception of Lindsay et al, 2007) have examined this relationship longitudinally and in different contexts. This has important implications for understanding the developmental changes in children's behaviour during preschool, at school entry and end of Key Stage 1, and also for exploring the context specificity (eg, school and home settings) of children's behaviour and its links with speaking and listening, reading and writing.

Method

Sample

The data for this study came from the second, third and fourth sweeps of the Millennium Cohort Study (MCS), a national longitudinal birth cohort study, which offers a large-scale information about the 'New Century's Children' and their families. The surveys were carried out when the cohort children reached the ages of 3, 5 and 7 respectively, achieving a response rate of 78% , 79% and 72.2% of the original target sample. The working sample derived from the surveys was 8765 singleton cohort children. The sample design allowed for over-representation of families living in areas with a high rate of socio-economic disadvantage~~, which increased the power of the study to analyse socio-economic effects~~. To ensure that the study is representative, the data were weighted to account for over-representation, non-response in the recruitment of the original sample and sample attrition. Full details about the origins and objectives of the MCS can be obtained from the UK Data Archive at Essex University (Hansen, 2008). Ethical approval for the MCS was gained and parents gave informed consent before interviews took place and a written consent for the cognitive assessments.

Measures

There are three sets of measures, namely behaviour, language and literacy.

Behaviour: The Strengths and Difficulties Questionnaire (SDQ) was used (Goodman, Meltzer and Bailey, 1998), which consists of five scales with five items each. The scales are: Emotional Symptoms (eg, Often seems worried), Conduct Problems (eg, Often has temper tantrums), Hyperactivity (eg, Restless, overactive, cannot stay still for long), Peer Problems (eg, Tends to play alone) and Pro-social (eg, Often volunteer to help others). The SDQ includes 25 attributes / items, 10 of which would generally be thought of as strengths, 14 of which would generally be

thought of as difficulties, and one, i.e., gets on better with adults than with other children, which is neutral. Each item can be marked "not true", "somewhat true" or "certainly true". In each subscale, scores for each of the five items were summed, giving a range of 0–10, and the total difficulties score, which is the sum of all problem SDQ domains (i.e., hyperactivity, emotional symptoms, conduct problems, and peer problems) had a range of 0–40. The prosocial score is not incorporated in the reverse direction into the total difficulties score since the absence of prosocial behaviours is conceptually different from the presence of psychological difficulties. The SDQ has a good test-retest reliability of .85 (Goodman et al, 1998).

Parent ratings of SDQ were obtained from parents when the cohort child was 3, 5 and 7 years old during parent interviews that took place during the whole year. Teacher ratings of SDQ were obtained at the end of Key Stage 1 through questionnaires sent to all teachers participating in the MCS.

Language and Literacy: Teacher measures of children's speaking and listening, reading and writing were obtained via teacher questionnaires, rated by using a Likert scale ranging from 1= 'way above average' to 5= 'way below average'. Due to small sample sizes in some categories, the 5 points were collapsed into 3, rated as 1=above average, 2=average and 3= below average. The MCS (4th sweep) did not include any national assessment data for language and literacy at the end of Key Stage 1. Teachers were asked to rate children's speaking and listening, reading and writing in relation to all children of this age (not just their present class or even school). ~~Teachers' on-going observations of children during the academic year were thought to offer a better alternative to national standardised test results.~~ -Teachers' on-going observations during the academic year was thought to be preferable to SATs scores obtained during test conditions which may not be appropriate for children with learning difficulties or children whose English is an additional language. Also, teacher assessment can be both normative and contextualised in terms of rating children's performance in relation to a normative group while accounting for the socio-economic context of the school (Leung and Rea-Dickins, 2007).

Data analytic plan

A repeated- measures ANOVA was conducted to examine parent-rated SDQ domains longitudinally (at ages 3, 5 and 7). Analyses of within- subject factors were deemed appropriate for the examination of longitudinal patterns in the ratings of SDQ domains (i.e., emotional symptoms, conduct problems, hyperactivity, peer problems, total difficulties and prosocial) at ages 3, 5 and 7 (Table 2). The effect sizes were calculated by applying the formulae $r = \sqrt{F(1, df_R) / F(1, df_R) + df_R}$, which uses the F-ratio and the residual degrees of freedom (df_R). Effect size values of 0-.2 are deemed small, .2-.5 medium and .5+ large (Field, 2009). Also, multivariate analyses of variance (MANOVA) were conducted to examine the effects of speaking and listening, reading and writing on parent and teacher ratings of child behaviour (SDQ) at age 7 (Tables 3, 4 and 5). Bonferroni post-hoc comparisons took place and the Cohen's effect size- d- was calculated (an effect size between .0 - .2 is small; .3-.5 is modest; .6-.8 is moderate and .8+ is strong) for the comparisons of interest for this study namely, above average / below average speaking and listening. Finally, bi-variate Pearson Product Moment correlations were run to examine the consistency between teacher and parent ratings of SDQ domains at age 7.

Results

Longitudinal variation in SDQ

With regard to parent ratings of child social, emotional and behavioural difficulties and prosocial behaviour over the 3-7 years period, significant but small, within-group differences were found for emotional symptoms; medium for hyperactivity, peer difficulties and prosocial behaviour; and large for conduct problems and total difficulties (Table 2). These results indicated that parent ratings of children's social and behavioural difficulties showed a downward trend whereas prosocial behaviour showed an upward trend between ages 3 and 7. In contrast, ratings of emotional symptoms remained fairly stable over the same period (see Table 1 for descriptive statistics). These results showed interesting patterns of longitudinal variation in parent ratings of emotional, social and behavioural difficulties and prosocial behaviour between preschool and the end of Key Stage 1. A substantive drop was observed in the ratings of social and behavioural difficulties (i.e., conduct problems, hyperactivity, peer difficulties and total difficulties) as children moved from preschool to formal education, particularly around school entry. Likewise, the largest increase in prosocial behaviour was observed between the ages of 3 and 5 years.

SDQ and speaking and listening, reading and writing

In probing the relationship between SDQ domains and speaking and listening, reading and writing at the end of Key Stage 1, significant multivariate effects on parent- and teacher-rated SDQ domains were found (Tables 3,4 and 5). Group comparisons (above versus below average speaking and listening, reading and writing) for parent- and teacher-rated SDQ at age 7 yielded significant differences that were strong in size for hyperactivity and total difficulties; moderate for conduct problems and peer difficulties; and modest for emotional symptoms. These results indicated that, compared to their peers with above average speaking and listening, reading and writing skills, 7 year olds with below average skills attracted substantively higher ratings of behavioural (total) difficulties, hyperactivity and peer problems in particular, by parents *and* teachers. Moreover, group effects were stronger for behavioural difficulties, conduct problems and hyperactivity than were for emotional symptoms. Regarding prosocial, speaking and listening group comparisons yielded differences strong in size for teacher ratings and modest for parent ratings. Likewise, reading and writing group comparisons showed moderate differences for teacher ratings and modest for parent ratings of prosocial. These results indicated that speaking and listening, reading and writing skills exerted stronger effects on teacher than parent ratings of prosocial behaviour. They also showed that, compared to reading and writing, speaking and listening exerted stronger effects on teachers' and parents' perceptions of child behaviour.

Parent and teacher SDQ ratings

The contextual stability of 7 year olds' behaviour in the home and at school was examined by investigating the correlations between teacher and parent ratings of child behaviour. Although the correlation co-efficients for all SDQ domains were statistically significant, they indicated low to moderate associations between parent and teacher ratings of child behaviour. The associations for total difficulties ($r=.46$, $p<.01$), conduct problems ($r= .32$, $p<.01$), hyperactivity ($r= .48$, $p<.01$) and peer problems ($r= .33$, $p<.01$) were stronger than those for emotional symptoms ($r=.25$, $p<.01$) and prosocial ($r= .26$, $p<.01$). These results indicated that teacher- parent

agreement is higher for behavioural and social difficulties, hyperactivity in particular, than is for emotional symptoms and prosocial behaviour. This differentiation points to context specificity for children's internalising difficulties and prosocial behaviour but not so much for externalising behaviour problems. Parents' perceptions of emotional difficulties and prosocial behaviour in the home varied from teachers' perceptions of the same behaviours at school, whereas they tended to agree about externalising behaviour difficulties.

Discussion

The purpose of this study was to examine longitudinally child behaviour during the early years and investigate concurrent associations between parent- and teacher-rated behaviour and language and literacy at the end of Key Stage 1. Longitudinal variations were found in parent ratings across SDQ domains, showing medium- to- large downward trends in social and behavioural difficulties, and a medium increase in prosocial behaviour over the 3-7 years period. Parent ratings of emotional symptoms remained fairly consistent over the same period. These findings suggest that during preschool and throughout Key Stage 1, ratings of children's social behaviour improved but ratings of emotional difficulties remained stable (although it is worth noting that parent ratings of emotional difficulties at 3, 5 and 7 were already low). In exploring the link between behaviour and language and literacy at the end of Key Stage 1, group comparisons yielded moderate- to- strong differences for parent- and teacher- rated social and behavioural difficulties. Interestingly, with regard to prosocial behaviour, 7 year olds' language and literacy exerted stronger effects on teacher than on parent ratings. Finally, contextual variation was found in teacher and parent ratings of 7 year olds' social behaviour. Specifically, teacher-parent agreement was higher for social and behavioural difficulties, hyperactivity in particular, than was for emotional symptoms and prosocial behaviour.

Changes in social behaviour during the early years

The findings in this study revealed longitudinal variations in parent ratings of social and behavioural difficulties and prosocial behaviour and stability in ratings of emotional difficulties. The observed medium- to- large drop in ratings of social and behavioural difficulties (i.e., conduct problems, peer problems and total difficulties) over the 3-7 years, especially around school entry, is comparable with that from previous studies (see Campbell et al., 2000; Keenan and Wakschlag, 2000; Lavigne et al, 1996) . ~~Approximately half of preschool children with significant externalising difficulties have been found to no longer manifest these behaviours after their transition to school (Campbell et al., 2000; Keenan and Wakschlag, 2000; Lavigne et al, 1996). A peak of socially inappropriate behaviour, aggression in particular, has been observed in three year olds (Egger and Angold, 2006), followed by a decline in oppositional difficulties between the ages of 3 and 5 years (Lavigne et al, 1996).~~ In contrast, ratings of emotional difficulties, such as anxiety, remained fairly stable over the preschool and early primary school years. This trend has also been observed in previous studies (see Edwards et al, 2009). ~~Emotional difficulties in three- year- olds were reported to be highly stable across 12 months, .75 and .74 based on maternal and paternal reports respectively (Edwards et al, 2009), and stable only between ages 4 and 5 (Rose et al, 1989), whereas in a study by Redmond and Rice, a downward trend in emotional difficulties was found for the period of 6-8 years (2002).~~

Although a minority of children will carry onto Key Stage 2 attracting elevated ratings of social and behavioural difficulties from their parents and teachers, for most children, manifestations of

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behaviour difficulties appear to be a transient phase in their development. As children move from preschool to Key Stage 1, their psychological and social repertoire is broadened to facilitate regulation of feelings and emotional responses to successfully adapt to the requirements of school life and the increasing complexity in peer interactions. Children play an active role in this process 'rather than simply undergo happenings in which environments act upon their personal endowments' (Bandura, 2006; p 28). Children's behavioural changes are adaptive (or maladaptive) responses to the social, linguistic and academic demands that different contexts and situations place on them. Equally, considering the symbiotic nature of parent-child relationships, parents' perceptions of child behaviour adjust to children's experiences of growing up. Also, as their repertoire of cognitive and linguistic skills is broadened, children are in a better position to offer a rationale for showing inappropriate behaviour, possibly moderating parents' perceptions of them (although one can argue that parents may place higher expectations for good behaviour on older children and thus showing little tolerance for poor behaviour).

The longitudinal variations in young children's behaviour raise questions about the nature of social behaviour in early years and the criteria used for defining inappropriate behaviour and the extent to which they are age appropriate and sensitive to the developmental needs in young children (Egger and Angold, 2006; Phillips and Lonigan, 2010). Owing to the rapid changes in social behaviour in early years, an important challenge is to differentiate between a broad range of normative misbehaviours which are age appropriate and disruptive behaviour that is not transient and has long-term consequences for children's social and academic development. Decisions about whether and under what circumstances it is appropriate to apply diagnostic criteria and the terminology of social, emotional and behavioural difficulties in young children require an open debate. Non-compliance and aggression are expected during the preschool years considering that children test limits and parental control as a necessary precursor to developing a sense of autonomy and learn social skills through trial and error (Campbell, 1995). There is a risk of over pathologising young children's behaviour, which has important implications considering the plethora of school-based initiatives towards supporting children's social development and wellbeing.

Child behaviour in the home and at school

As with previous research (eg, Lindsay et al, 2007; Hartas, 2011), the consistency between teacher and parent ratings of social, emotional and behavioural difficulties and prosocial behaviour was found to vary: higher for social and behavioural difficulties, hyperactivity in particular, and lower for emotional symptoms and prosocial behaviour. Parents and teachers tended to agree more on externalising behavioural difficulties, such as hyperactivity, than did for emotional difficulties and prosocial behaviour, pointing to context specificity for the latter behaviours. The relatively low agreement between parents' and teachers' perceptions of children's emotional difficulties and prosocial behaviour can be explained by considering that home and school place different expectations about the appropriateness of social behaviour and offer different opportunities for encouraging or impeding its manifestation. For example, in the home, parents have opportunities to observe prosocial behaviour (or lack of it) in children's interactions with family members and friends across different situations whereas these opportunities may not be available at school. Also, the observation period informing SDQ ratings differ between parents and teachers in that most teachers spend a year or less interacting with and

observing a group of children whereas this is not the case for parents, further supporting context specificity in children's behaviour ratings.

Moreover, teachers tend to rate higher behaviours (eg, hyperactivity) that interfere with aspects of children's learning and language/ literacy development (Hartas, 2011), suggesting that their perception about children's social behaviour may be influenced by their linguistic and academic performance in class. Also, the extent to which behaviour is visible plays an important role in its rating: compared to hyperactivity, emotional difficulties such as anxiety or phobias are less visible in class and perhaps less likely to be registered. Finally, teachers observe behaviours outside of the home setting in situations that are likely to provoke strong reactions and pose social and academic demands on children. In so doing and by being exposed to a large number of children, they develop norms regarding children's behaviour and social competence that are not otherwise available to parents (Saudino, Ronald and Plomin, 2005).

The contextual variation in perceptions of child behaviour highlights children's active agency in modulating their social behaviour as an adaptive response to the contexts that surround their life. With this in mind, supporting children's behaviour and learning may be best served by a focus on environmentally mediated factors at school and in the home (Trzesniewski et al., 2006). For example, at school, we may focus on classroom contexts in terms of task engagement, teacher instruction and child-teacher relationships to understand how these factors affect language and literacy rather than offering generic, decontextualised behaviour support. Children's behaviour is an adaptive response to the happenings at school and in the home, and thus understanding the systemic and structural factors that influence children's places may be a better way of supporting children's behaviour and wellbeing.

Links between social behaviour and language and literacy

In exploring the relationships between children's speaking and listening, reading and writing and behaviour at the end of Key Stage 1, some interesting patterns emerged. Moderate-to-large group differences were found for social and behavioural difficulties (hyperactivity and total difficulties in particular) and modest for emotional difficulties, indicating that children's language and literacy were likely to influence parents' and teachers' ratings of behaviour difficulties more so than ratings of emotional difficulties. Consistently, in a recent study by Hartas (2011), 3 and 5 year olds' vocabulary was found to exert a modest effect on parent ratings of social and behavioural difficulties and a weak effect on emotional difficulties. A differential effect on parent and teacher ratings of prosocial behaviour was also found. Specifically, group comparisons between children with above and below average speaking and listening, reading and writing showed substantive differences in teacher only ratings of prosocial behaviour (parent prosocial ratings were modest). These findings point to the important role children's expressive and receptive language and literacy plays in teachers' and parents' perceptions of their behaviour (both negative and positive), especially during the early primary school years. They also point to the fact that the relationship between language, literacy and child behaviour is not straightforward.

The magnitude of the relationships between behaviour and language and literacy has been found to vary across different developmental trajectories, different behaviour dimensions and different raters. Compared with 3 and 5 year olds' behaviour and language (Hartas, 2011), for 7 year olds, moderate- to -strong language differences in parent and teacher ratings of social and behavioural

difficulties and strong effects in teacher only ratings of prosocial behaviour showed that the association between language and behaviour becomes stronger for older, primary school children. As children go through primary school, language becomes increasingly important for behaviour regulation and peer interactions, as well as for the display of empathy and social relatedness.

The effects of language and literacy were found to vary depending on behaviour dimensions: stronger on ratings of externalising (eg, hyperactivity) than internalising (eg, emotional problems) behaviour. The modest link between ratings of emotional difficulties and language and literacy indicates that, irrespective of their language and literacy skills, 7 year olds received roughly equal ratings of emotional difficulties. This relatively weak association may be explained by considering children's age in that the link between language and emotional difficulties does not appear to be strong in young children but it becomes stronger over time especially for children with persistent language difficulties. Whilst young children with language delays and reading difficulties are often rated higher in externalising behaviour problems, older children tend to attract higher ratings of internalising problems (eg, anxiety) (Beitchman et al, 2001). However, in a study by Conti-Ramsden and Botting (2008), no direct relationship was found between emotional difficulties (such as anxiety or depression) and language, cautioning against approaching emotional difficulties as a direct result of language or literacy difficulties. Although the relationship between language difficulties and emotional problems does not appear to be strong, children with emotional problems may show a lower ability to use language in literacy to learn with and from their peers (Snowling et al, 2006).

Children's levels of language and literacy had differential effects on different raters: compared to parent ratings of prosocial behaviour, the effects were stronger on teacher ratings, suggesting that good language and literacy skills exerted a greater influence on teachers' views of children's positive behaviour. This is comparable with previous research in which primary school children with language difficulties did not differ from same-age typically developing peers on parent ratings of prosocial behaviour (Farmer, 2000). Also, for 3-5 year~~s~~ olds, the link between parent-rated prosocial and vocabulary was found to be weak (Hartas, 2011). For teachers, perceptions of prosocial behaviour appear to be influenced by children's expressive and receptive language and performance in literacy, whereas parents are likely to be influenced by not only language but also children's capacity to regulate emotions and relate socially to others considering that social competence involves not only linguistic but also affective, social and cognitive components.

~~To understand the bidirectional influences of language, literacy and behaviour over time, four theoretical explanations are offered. The first is based on the notion that language or literacy difficulties (due to factors such as phonological difficulties or poverty) might trigger frustration, avoidance and withdrawal from language and literacy tasks (eg, Morgan et al, 2008; Miles and Stipek, 2006).This process may take time in that considering the emerging normative comparisons, as children grow older they become increasingly more aware of their abilities and performances in comparison to their peers, possibly, experiencing negative emotions that may set the stage for increased difficulties with social behaviour. The second explanation refers to behavioural difficulties (eg, hyperactivity, inattention) contributing to language, reading and~~

~~writing difficulties. Off-task and disruptive behaviours may pose obstacles to children attending and processing information in class (eg, Downer and Pianta, 2006). Thirdly, it may be that language/ literacy and behaviour difficulties co-exist and reciprocally influence each other in a cyclical manner manifested as cycles of disruptive behaviour triggering learning disengagement and school failure which further accentuate manifestations of acting out, frustration or task avoidance (Morgan et al, 2008). Fourthly, the presence of a third factor may explain the association between language / literacy and behaviour. Factors such as poverty, ethnicity or social class have been found to predict differences in language, literacy and behaviour in young children (eg, Pike et al, 2006).~~

The associations between behaviour and language and literacy should be seen through the prism of sample characteristics, definitions and assessment methods for language, literacy and behaviour in young children and the rapid changes in children's social cognition that occur during the early years. Differences in sample characteristics (community v. clinical samples) influence the magnitude of the link between language and behaviour in that the link is stronger in clinical samples due to an overrepresentation of extremes of co morbidity (Plomin, Price, Eley, Dale and Stevenson, 2002). Differences in the methods (eg, ratings) used for assessing children's language, literacy and social behaviour may also explain variation. Different definitions of behaviour and its underpinning dimensions have resulted in the development of various behaviour checklists and measures, which are likely to influence the nature and magnitude of the associations between behaviour and language and literacy. Finally, social cognition underpins children's understanding of emotions and social situations and is likely to influence children's social experiences in their interactions with parents, peers and teachers, ultimately influencing ratings of prosocial behaviour. Among preschool children, inappropriate behaviour often reflects difficulties with emotion understanding and regulation rather than with language or emergent literacy (Hughes & Ensor, 2009). As children grow up, their capacity to identify and predict others' emotions and their responses to emotional situations becomes particularly important for regulating emotions and their behavioural expression and, ultimately, reducing behaviour difficulties (Egger & Angold, 2006). There is ample evidence that already at 4 years of age, children have developed an understanding of the validity of norms of justice and care, and of social rules (although for young children, moral identity cannot be invoked as an explanation for prosocial action). As children grow older, their expressive and receptive language becomes a salient tool in class to help them negotiate situations and express empathy to alleviate their peers' distress, or collaborate on a project successfully. And as their reading and writing skills develop, children are more likely to display a task-focused behaviour and engage with others in class (Morgan et al, 2008).

Strengths and limitations

There are strengths and limitations to this study. Using a large, community-based sample has enabled replication of other studies with fairly small samples to examine the longitudinal and contextual patterns of child behaviour (positive and negative) as well as its associations with language and literacy, a relatively under researched area in early years. This study included multiple behaviour dimensions (i.e., emotional, social and behavioural difficulties and prosocial behaviour) at three different points in time (i.e., preschool, school entry, end of Key Stage 1), and involved multiple informants (i.e., parents, teachers) to examine longitudinal and contextual trends in child behaviour.

Considering that associations between language, behavioural, and emotional problems are influenced by the type and severity of language impairment (Snowling et al, 2006), it would have been useful for this study to have had multiple measures of children's language rather than sole ratings of speaking and listening. However, although there may be several limitations in using teacher ratings in evaluating children's language, literacy and associated behaviour–emotional problems (Lindsay et al, 2007), teacher reports are important as a screening procedure for making further referrals if necessary in that they offer a normative view of children's linguistic, academic and social competence. Most importantly, within the MCS, teachers were asked to evaluate all children over a short period of time and their language, literacy and social behaviour were assessed within the same questionnaire and at the same point in time (end of Key Stage 1). The fact that the ratings for language and behaviour–emotional problems were produced by the same teacher may, however, have inflated the relationship. Taking into account the consistency in the strength of the associations found in parent and teacher ratings for different levels of language and literacy, the possibility of an inflated relationship between language and behaviour (for teacher ratings) is less of a concern in this study. Although teachers evaluated children's behaviour over a short period of time at the end of Key Stage 1, parent ratings were collected throughout the year, resulting in different timings for collecting SDQ information. This is a feature inherent to longitudinal datasets such as MCS in that the main data are collected over long periods of time. In this study, the examination of longitudinal changes over the 3-7 period was not affected because the different timings of SDQ data collection occurred at all stages (3, 5 and 7). Nor did it affect the examination of the concurrent relationships between parent SDQ ratings and literacy and language because a MANOVA examined mean differences (on average) between groups. It might have affected however the magnitude of the correlations between parent and teacher SDQ ratings, contributing to the modest correlations found.

Utilising secondary data has benefits and limitations. There are social benefits in that handling secondary data is an unobtrusive process. Also, the technical expertise involved in MCS in terms of developing surveys and using independently validated instruments (such as SDQ) is high, ensuring data that are of the highest quality (Hansen, 2008). This is particularly important for this study which relied on SDQ measures over three sweeps (at ages 3, 5 and 7). Whilst the SDQ is a valid behaviour checklist, it uses frequency criteria for broadly defined behaviours (eg, 'often has temper tantrums') without providing information about the intensity and the flexibility in children's responses to contextual factors. Another limitation is that the secondary analyst is removed from the source of data (eg, parent and teacher interviews) and that may affect considerations of the dynamics of the research context and the capacity to take a nuanced approach to data analysis and interpretation.

Finally, to truly consider the dynamic interplay between child behaviour and language and literacy, an examination of reciprocal effects is required (Miller-Lewis et al, 2006) in terms of collecting data across three different points in time, for example, language and literacy measures at time one, affecting ratings of child behaviour (both problem and prosocial) at time two, which then affect language and literacy at time three. Also, later work needs to explore whether the observed downward trend in children's social and behavioural difficulties can be sustained to the end of Key Stage 2. As Feinstein and Bynner (2004) argue, doing well cognitively and behaviourally at age 5 does not matter for long-term outcomes as much as sustaining it at age 10. A future study that includes measures of behaviour from preschool to the end of Key Stage 2 will

be useful in examining longitudinal and contextual patterns in social and behavioural difficulties and the extent to which they are sustained throughout childhood.

Conclusion and implications

Taken collectively, the findings from this study offer support to a view of child behaviour as being transient and context bound, affecting and affected by children's levels of language and literacy. A conclusion to be drawn is that children's social behaviour is far from being set in early years. As with language and cognition (Feinstein and Bynner, 2004), and based on the trends observed during the 3-7 period, children's behaviour changes substantially during the preschool and early primary school years, and these changes are likely to have long-term effects on outcomes in adult life. Behaviour changes are likely to be the product of positive or negative experiences and contextual influences at school and in children's home and neighbourhood. As children enter Key Stage 2, changes in the academic and social demands have the potential to enhance or impede progression in language, literacy and social behaviour or even reverse elevated behaviour ratings as the current study has shown. The longitudinal behaviour trends found here challenge theoretical positions, for example in Kohlberg's theory of moral development, which are based on the principle of relatively fixed stages of social behaviour development underpinned by linear progression processes that do not always account for children's capabilities (eg, language) and social contexts.

The present study points to the need for support that targets problems with language and literacy and task-focused behaviour simultaneously. Considering the complex, bidirectional relationships between language, literacy and behaviour, educational practices should have a dual goal: to support language / literacy *and* behaviour. Moreover, given that children with poor speaking and listening, reading and writing skills tend to attract high ratings of negative behaviour, teachers need to be aware of how their perceptions of children's behaviour are influenced by their linguistic and academic performance. Considering that teachers' ratings of positive behaviour are influenced by children's language and literacy more so than parents' are, social problem solving and the development of intellectual tools to enable children to express empathy, talk about feelings, engage in cooperation and learn from and with others should be promoted in class. Furthermore, although encouraging parents to address child behaviour problems in the home is important, classroom practices that offer consistent behaviour, language and literacy support at preschool and during the transition to middle childhood are needed. These practices can be extended at home. However, considering the low-to-medium agreement between teachers' and parents' views of child behaviour, approaching children's behaviour support in a relational manner and achieving continuity across different settings can be challenging.

Current school-based initiatives that support children's wellbeing tend to focus much on the subjective experiences of individual children and less so on the contextual parameters and other factors that are likely to influence their behaviour. Children's emotional difficulties and low self esteem are approached as being integral to material, social and emotional deprivation, assuming

the existence of direct causal links between children's behaviour, as an individual trait, and academic and life-long outcomes. There is an implicit assumption that children (nearly every child) are 'at risk' or 'diminished subjects' (Ecclestone and Hayes, 2009), reinforcing therapeutic interventions that focus on individual dispositions and characteristics without accounting for the social and academic context of children's life. As such, supporting children's wellbeing and academic success becomes an atomized act of personal development rather than a collective enterprise that accounts for not only children's dispositions but also the curriculum, teacher literacy instruction and opportunities for educational advancement in the home. Ultimately, by removing the political and social context of education, children's difficulties with language, literacy and behaviour are reduced to mere concerns with personal development. To educate the 'whole person', we need to redress the imbalance between a 'therapeutic culture' approach of child behaviour as individual psychopathology and educational support through a rigorous curriculum that provides children with the intellectual tools to make sense of human relationships and their place in the world.

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Appendix

Table 1. Descriptive Statistics for SDQ at ages 3, 5 and 7

	Age 3	Age 5	Age 7
SDQ	M (SD)	M (SD)	M (SD)
Emotional symptoms	1.58 (2.06)	1.47 (1.86)	1.45 (1.70)
Conduct problems	2.92 (2.41)	1.52 (1.75)	1.30 (1.47)
Hyperactivity	4.26 (2.87)	3.38 (2.64)	3.24 (2.49)
Peer problems	2.24 (2.70)	1.56 (2.13)	1.13 (1.53)
Total difficulties	11.02 (7.48)	7.94 (6.19)	7.08 (5.27)
Prosocial	7.76 (2.02)	8.51 (1.63)	8.62 (1.62)

N=8765

Table 2. *Repeated ANOVA for SDQ at ages 3, 5 and 7*

Source	Df	F	p	r
Within subjects				
Emotional Symptoms	1	21.22	.000	.05
Within-group error	7873	(2.37)		
Conduct Problems	1	4267.83	.000	.59
Within-group error	7888	(2.44)		
Hyperactivity	1	1083.83	.000	.34
Within-group error	7870	(3.91)		

Peer Problems Within-group error	1 7869	1386.05 (3.52)	.000	.38
Total Difficulties Within-group error	1 7843	2771.10 (21.19)	.000	.51
Prosocial Within-group error	1 7880	1297.36 (2.48)	.000	.37

N=8665-8765

Note: Values enclosed in parentheses represent mean square errors

Table 3. Multivariate M, SD for Speaking and Listening on SDQ by Parent and Teacher at age 7

	Rater	Above Average M(SD)	Average M(SD)	Below Average M(SD)	F	d
Emotional Symptoms	P T	1.14(1.41) 1.03 (1.58)	1.48(1.67) 1.51 (1.94)	2.12 (2.13) 2.31 (2.30)	161.96*** 216.00***	.54 .64
Conduct problems	P T	.97(1.23) .37 (.88)	1.33(1.45) .58 (1.19)	2.03(1.78) 1.29 (1.68)	249.85*** 274.33***	.69 .68
Hyperactivity	P T	2.41 (2.17) 1.57 (2.08)	3.39 (2.36) 2.99 (2.57)	5.10 (2.68) 5.65 (2.77)	602.25*** 1279***	1.10 1.66
Peer problems	P T	.77 (1.21) .79 (1.32)	1.13 (1.44) 1.03 (1.47)	1.96 (2.05) 2.23 (2.08)	295.92*** 397.98***	.70 .82
Total difficulties	P T	5.30(4.17) 3.77 (4.01)	7.33 (4.93) 6.13 (4.99)	11.22(6.38) 11.50 (5.90)	668.56*** 1162.50***	1.09 1.53
Prosocial	P T	8.85(1.46) 8.54 (1.85)	8.65 (1.53) 7.83 (2.13)	7.98(2.04) 6.23 (2.52)	133.06*** 538.38***	.49 1.05

N=8665-8765

*** P<.000

Note: d= Cohen's effect size

Table 4. Multivariate M, SD for Reading on SDQ by Parent and Teacher at age 7

	Rater	Above Average M(SD)	Average M(SD)	Below Average M(SD)	F	d
Emotional Symptoms	P	1.21(1.48)	1.45(1.63)	1.96 (2.06)	118.30***	.41
	T	1.15 (1.69)	1.49 (1.96)	1.96 (2.17)	106.50***	.41
Conduct problems	P	1.00(1.25)	1.31(1.42)	1.97(1.77)	276.39***	.63
	T	.38 (.92)	.59 (1.18)	1.12 (1.62)	219.09***	.56
Hyperactivity	P	2.48 (2.19)	3.39 (2.35)	4.81 (2.65)	592.28***	.95
	T	1.72 (2.20)	3.04 (2.58)	4.95 (2.9)	978.02***	1.24
Peer problems	P	.85 (1.28)	1.06 (1.42)	1.82 (1.93)	257.01***	.60
	T	.89 (1.43)	1.04 (1.53)	1.73 (1.86)	166.85***	.50
Total difficulties	P	5.53(4.30)	7.21 (4.85)	10.56(6.25)	616.14***	.93
	T	4.15 (4.36)	6.19 (5.00)	9.76 (6.14)	728.73***	1.05
Prosocial	P	8.80(1.52)	8.66 (1.52)	8.21(1.88)	79.58***	.34
	T	8.33 (2.00)	7.82 (2.17)	7.00 (2.49)	215.74***	.60

N=8291-8575

*** P<.000

Note: d= Cohen's effect size

Table 5. Multivariate M, SD for Writing on SDQ by Parent and Teacher at age 7

	Rater	Above Average M(SD)	Average M(SD)	Below Average M(SD)	F	d
Emotional Symptoms	P	1.16(1.43)	1.37(1.59)	1.85 (1.99)	113.05***	.40
	T	1.10 (1.63)	1.35 (1.84)	1.91 (2.19)	118.34***	.42
Conduct problems	P	.93(1.18)	1.19(1.38)	1.87(1.71)	296.13***	.64
	T	.31 (.82)	.51 (1.08)	1.07 (1.58)	272.43***	.60
Hyperactivity	P	2.22 (2.05)	3.12 (2.29)	4.65 (2.64)	709.42***	1.02

	T	1.28 (1.87)	2.63 (2.42)	4.85 (2.8)	1390.52***	1.47
Peer problems	P	.78 (1.21)	.99 (1.35)	1.68 (1.89)	254.26***	.56
	T	.75 (1.30)	.99 (1.47)	1.69 (1.88)	241.37***	.58
Total difficulties	P	5.09 (3.98)	6.67 (4.64)	10.05(6.10)	676.5***	.96
	T	3.47 (3.82)	5.50 (4.66)	9.54 (6.06)	998.41***	1.20
Prosocial	P	8.83(1.47)	8.72 (1.52)	8.28 (1.83)	82.05***	.33
	T	8.53 (1.86)	7.97 (2.12)	7.02 (2.45)	312.49***	.70

N=8287-8765

*** P<.000

Note: d= Cohen's effect size